EDITORIAL COMMENT†

CYTOPLASMIC IMPLANTATION

About five years ago, it was shown by Bernheimer and Harrison[1] of Temple University, that there are antigenic differences between morphologically differentiated strains of paramecia. Rabbits immunized against one strain yield antibodies giving precipitin and complement-fixation reactions with homologous strains, with practically no cross-reactions with heterologous strains. Such antisera are specifically toxic. Tested in dilutions as high as 1:800 they often cause a "paralytic phenomenon" or "immobilization reaction" with homologous paramecia. After 2 hour incubation at 28° C, all ciliary action ceases, and the contractile vacuoles and undulating membrane no longer function. Death and disintegration eventually follow.

It was afterwards shown[2] that at least one strain (Paramecium aurelia) is antigenically heterogenous. It can be subdivided into at least four sub-antigenic groups. Bernheimer found no constant relationship between this sub-antigenicity and mating type. Instances were observed in which both members, neither member or only one member of a conjugating pair was immobilized by a given sub-specific antiserum.

In their latest work Harrison and Fowler[3] studied the effects of conjugation between two such antigenically distinct sub-species. Members of each group reacted quickly and extensively to homologous antiserum, but did not react at all to heterologous antiserum. As a result of heterologous conjugation members of each conjugating group acquired the specific antigenicity of the opposite group. This acquired antigenicity persisted for at least one month of active asexual multiplication.

The antigens involved in the conjugation transformation are very largely, if not exclusively cytoplasmic in character. From this and from microscopical evidence Harrison concludes that during the course of conjugation of Paramecium bursaria there is in addition to the well-known nuclear interchange, an extensive interchange of cytoplasm. The resulting cytoplasmic implant apparently multiplies or is multiplied in symbiosis with the new host cell.

Aside from its general biological interest the new theory of cytoplasmic implantation may necessitate a reëxamination of the basic concepts in many fields of theoretical immunology and clinical medicine. The nearest current approach to this phenomenon is in type transformations or capsular ingrafting of pneumococci. The theory suggests the futuristic concept that a similar cytoplasmic conjugation may take place between tissue cells.

W. H. MANWARING,
Stanford University.

REFERENCES

1. Bernheimer, A. W., and Harrison, J. A.: J. Immunol., 39:73, 1940.

2. Bernheimer, A. W., and Harrison, J. A.: J. Immunol., 41:201, 1941.

3. Harrison, J. A., and Fowler, E. H.: Science, 102:377 (Oct. 12, 1945).

E.M.I.C. Will Continue For Some Time After Program Is Declared Ended

With the cessation of the war, it was thought that cases under the Emergency Maternity and Infancy Care (E.M.I.C.) program would soon decrease in California. Since it is now doubtful that a formal declaration of the end of the emergency will soon be made, and since E.M.I.C. will continue for six months after the declaration, it appears that health departments for some time will continue to administer medical and hospital services to wives and infants of servicemen.

Under the policies of eligibility, all cases whose pregnancy occurred at the time the man was in the armed services and prior to the termination of the program will be accepted for care. Infants will also be eligible if the father at any time during the infant's prenatal life was in the armed services prior to the declaration of the end of the emergency. This, in effect, means that the E.M.I.C. program will taper off gradually as men are discharged but that it will continue to be in effect, principally for infant care, for a period from 18 to 21 months after the formal closing of the program which will occur six months after the emergency is declared at an end.

In California there were 3,126 women and 286 infants admitted to E.M.I.C. care during September. A total of 67,636 women and 4,580 infants have been admitted to care since the program was started in California in July, 1943. Expenditures since the start of the program have totaled $5,044,910.63.

Opinion of the Attorney General on Questions Relating to the California Tuberculosis Subsidy

A recent opinion of the Attorney General clarifies questions relating to the awarding of the tuberculosis subsidy, particularly to cities and counties which do not maintain sanatoria. The opinion was given in response to an inquiry from the State Department of Public Health and is quoted below.

"Sections of the Health and Safety Code material to this opinion are as follows:

"'3300. Each city, county, or group of counties may establish and maintain a tuberculosis ward or hospital for the treatment of persons suffering from tuberculosis. Each city, county or group of counties that establishes and maintains a tuberculosis ward or hospital shall receive from the State the sum of seven dollars ($7) per week for each person suffering from tuberculosis, cared for therein at public expense (*or cared for in private hospitals or sanatoriums under contract with the county,*) who is unable to pay for his support and who has no relative legally liable and financially able to pay for his support and who has been a bona fide resident of the State for one year; except that the city, county, or group of counties is not entitled to receive this State aid unless the tuberculosis ward, sanatorium or hospital conforms to the regulations of and is approved by the Bureau of Tuberculosis.'". . .

Los Angeles Center Conducts Research

The Los Angeles Rapid Treatment Center has been selected by the United States Public Health Service as one of the institutions to conduct research in the treatment of neurosyphilis with penicillin and fever therapy.

† This department of CALIFORNIA AND WESTERN MEDICINE presents editorial comments by contributing members on items of medical progress, science and practice, and on topics from recent medical books or journals. An invitation is extended to all members of the California Medical Association to submit brief editorial discussions suitable for publication in this department. No presentation should be over five hundred words in length.